

What is claimed is:

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1. A process for producing high purity isopropyl alcohol comprising the steps of:
 - (a) feeding a feed stream comprising at least about 99.9 wt.% isopropyl alcohol into a separation column;
 - (b) separating said isopropyl alcohol into an overhead stream taken overhead from said separation column and a bottoms stream taken as bottoms from said separation column; and
 - (c) removing said high purity isopropyl alcohol at a point:
 - (i) below where said feed stream enters said separation column but above said bottoms stream, or
 - (ii) above where said feed stream enters said separation column but below said overhead stream,

wherein said high purity isopropyl alcohol has a metals content of less than about 1 ppb and a water content of less than about 100 ppm.
 2. The process of claim 1, further comprising the step of passing said high purity isopropyl alcohol through a filter after removing said high purity isopropyl alcohol from said separation column, wherein said filter is selected from the group consisting of: a membrane, a microfiltration cartridge, an ultra-filtration device, and mixtures thereof.
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3. The process of claim 2, wherein said filter is a membrane selected from the group consisting of: ceramic membranes, polymeric membranes, metallic membranes, and mixtures thereof.
- 5 4. The process of claim 1, further comprising the step of passing said high purity isopropyl alcohol through an ion exchange resin, thereby forming an ultra-high purity isopropyl alcohol having less than about 100 ppt of any metal impurity.
5. The process of claim 4, wherein said ion exchange resin is at least one resin selected from the group consisting of: a cationic resin, an anionic resin, and mixtures thereof.
6. The process of claim 4, further comprising the step of passing said ultra-high purity isopropyl alcohol through a filter, wherein said filter is selected from the group consisting of: a membrane, a microfiltration cartridge, an ultra-filtration device, and mixtures thereof.
7. The process of claim 6, wherein said filter is a membrane selected from the group consisting of ceramic membranes, polymeric membranes, metallic membranes, and mixtures thereof.
- 20 8. The process of claim 1, wherein said separation column is a distillation column.

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The process of claim 8, wherein said overhead stream is about 5 to 30 wt.% of the weight of said feed stream and said bottoms stream is about 5 to 30 wt.% of the weight of said feed stream.

10.

The process of claim 1, wherein said at least about 99.9 wt.% isopropyl alcohol is produced by a method comprising the step of distilling an isopropyl alcohol solution that contains no more than about 14 wt.% water using a ternary azeotrope.

11.

A process for producing a high purity isopropyl alcohol comprising the steps of:
(a) feeding a feed stream comprising at least about 99.9 wt.% isopropyl alcohol into a separation column; and
(b) separating said isopropyl alcohol into an overhead stream taken overhead from said separation column and a bottoms stream taken as bottoms from said separation column, wherein said overhead stream comprises said high purity isopropyl alcohol having a metals content of less than about 1 ppb and a water content of less than about 100 ppm.

12.

The process of claim 11, further comprising the step of passing said high purity isopropyl alcohol through a filter after collecting said high purity isopropyl alcohol from the overhead stream taken overhead, wherein said filter is selected from the group consisting of: a membrane, a microfiltration cartridge, an ultra-filtration device, and mixtures thereof.

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13. The process of claim 12, wherein said filter is a membrane selected from the group consisting of: ceramic membranes, polymeric membranes, and mixtures thereof.
14. The process of claim 11, further comprising the step of passing said high purity isopropyl alcohol through an ion exchange resin, thereby forming an ultra-high purity isopropyl alcohol having less than about 100 ppt metal impurities.
15. The process of claim 14, wherein said ion exchange resin is at least one resin selected from the group consisting of: a cationic resin, an anionic resin, and mixtures thereof.
16. The process of claim 14, further comprising the step of passing said ultra-high purity isopropyl alcohol through a filter, wherein said filter is selected from the group consisting of: a membrane, a microfiltration cartridge, an ultra-filtration device, and mixtures thereof.
17. The process of claim 16, wherein said filter is a membrane selected from the group consisting of: ceramic membranes, polymeric membranes, metallic membranes, and mixtures thereof.
18. The process of claim 11, wherein said separation column is a distillation column.

00587103-060200

19. The process of claim 18, wherein said overhead stream is about 60 to 98 wt.% of the weight of said feed stream and said bottoms stream is about 2 to 30 wt.% of the weight of said feed stream.

5 20. The process of claim 11, wherein said at least about 99.9 wt.% isopropyl alcohol is produced by a method comprising the step of distilling an isopropyl alcohol solution that contains no more than about 14 wt.% water using a ternary azeotrope.

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